

Analysis of topocentric and gravimetric data from modern space missions

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Abstract

© 2018 by IOP Publishing Ltd. The present paper focuses on the analysis of modern lunar missions and ground-based projects, such as "Chandrayaan -1", "Chandrayaan -2", "Chang'e 1", "Chang'e 2", "Chang'e 3", "Clementine", "GRAIL", "KAGUYA", "LRO/LCROSS", "LRO", Lunar Laser Ranging, "Lunar Prospector", "SMART-1". The methods and algorithms of constructing a dynamic model of the lunar physical surface as well the results are considered. A particular attention is given to the "LRO" project which was the first step towards implementation of the long-term program on creating manned lunar bases. Essential information on lunar dynamics was provided by observations of the Moon's physical libration, since the study of celestial objects' rotation allows for understanding their complex internal structure, particularly, when there is no opportunity to use other methods.

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